

Notice of Allowability

Application No.

10/810,811

Examiner

Charles Chow

Applicant(s)

KASAMI ET AL.

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2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/9/2007.
2. ☒ The allowed claim(s) is/are 1, 3-9, 11-17, 19-21.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 8/30/3007.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

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Detailed Action

1. This office action is for amendment received on 8/9/2007.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment has been given from attorney Michael Monaco in a telephone interview on August 30, 2007. to amend independent claims 1, 9, 17, 20-21, by replacing the parenthesis with comma, together with removing the parenthesis, as following:

In line 3 of **claim 1**, replacing "(" with "," and replacing ")" with ",".

In line 4 of **claim 1**, replacing "(" with "," and removing ")".

In line 13 of **claim 1**, replacing "(" with ",".

In line 14 of **claim 1**, removing ")".

In line 3 of **claim 9**, replacing "(" with ",".

In line 4 of **claim 9**, replacing ")" with "," after "N", and replacing "(" with "," and removing ")" after "2".

In line 21 of **claim 9**, replacing "(" with ",".

In line 22 of **claim 9**, removing ")".

In line 3 of **claim 17**, replacing "(" with ",".

In line 4 of **claim 17**, replacing ")" with "," after "N", and replacing "(" with "," and removing ")" after "2".

In line 15 of **claim 17**, replacing "(" with ",".

In line 16 of **claim 17**, removing ")".

In line 3 of **claim 20**, replacing "(" with "," and replacing ")" with ",".

In line 4 of **claim 20**, replacing "(" with "," and removing ")" after "2".

In line 7 of **claim 20**, replacing "(" with ",".

In line 8 of **claim 20**, removing ")".

In line 3 of **claim 21**, replacing "(" with ",".

In line 4 of **claim 21**, replacing ")" with "," after "N", and replacing "(" with "," and removing ")" after "2".

In line 13 of **claim 21**, replacing "(" with ",".

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In line 14 of **claim 21**, removing ")".

Allowable Subject Matter

3. The following is an examiner's statement of reasons for allowance:

Claims 1, 3-9, 11-17, 19-21 are allowable over the prior art of record. The prior arts fail to teach the allowable features, singly, particularly, or in combination or rendering obviousness.

Applicant has amended independent claims 1, 9, 17, 20-21 with the allowable limitation features from the objected claims 2, 10, 18 as indicated in the last office action [page 11 of applicant amendment 8/9/2007].

The dependent claims are also allowable due to their dependency upon the allowable independent claims above and the having additional claimed features.

The cited prior arts fail to teach the allowable features in below, associated with the N correlations, the symbol determination, & the N possible symbols, in the independent **claims 1, 9, 17, 20-21**, for

a ratio between α_0 and α_1 is the ratio a ratio between a channel impulse response coefficient of a preceding wave and a channel impulse response coefficient of a one-chip delay wave each included in the radio signal received by said antenna.

The closest prior art, **Holt et al. [US 2004/0096,017 A1]**, teaches a receiver [Fig. 5] having an antenna 502 for receives signals modulated according to the Complimentary Coded Keyed CCK, having 64 possible code words n, made up of eight symbols M, according to IEEE 802,11.b [paragraph 0013]; the N correlations, 320-1 to 320-N [Fig. 3 & 120-1 to 120-N in Fig. 1], the codeword selector 160/360 for determining of the largest codeword output based on N degree of correlated output from 120-1 to 120-N [paragraph 0022], but fails to teach the above allowable features, a ratio between α_0 and α_1 is the ratio

a ratio between a channel impulse response coefficient of a preceding wave and a channel impulse response coefficient of a one-chip delay wave each included in the radio signal received by said antenna.

Rawlins et al. [US 7,010,559 B2] teaches the m correlators for correlating received waveform X_i [col. 7, line 19 & col. 6, line 66 to col. 7, line 27]; the correlating encoded data word X_0-X_{M-1} with encoded coefficients having the protocol of CCK of IEEE 802.11 WLAN [col. 1, line 66 to col. 40, Fig. 8]; the N groups of possible correlations from the combinations produced in first layer, second, final layer [col. 2, lines 11-40, Fig. 3A/Fig. 3B & col. 13, lines 64 to col. 14, line 63], but fails to teach the above allowable features missed by Holt.

Other prior arts in below are also considered, but they fail to teach the above allowable features.

Chen et al. [US 2004/0091,023 A1] teaches the demodulation of the complementary code keying CCK chips, the computing of the multi-path interferences to cancel the intra-codeword chip interference, the selectors 22/26 & cir estimation [abstract, Fig. 2, Fig. 1-14, paragraph 0027-0030, 0034-0035].

Takada [US 2002/0155,812 A1] teaches the level comparison unit 83, 84 [Fig. 9] for removing of the signal exceeding over the threshold, in order to reduce the interference in the received signal [paragraph 0387].

Ishii [US 6,606,347 B1] teaches the outputs of subtractor 32 are provided outputs to correlators IEU 1, to 1_N [Fig. 1, col. 29-47, Fig. 4], for the symbol despreading.

Other prior arts are also considered. They are: **Hu et al. [US 7,145,969 B1]**, an apparatus & method for decoding CCK], **Sato [US 6,188,679 B1]**, **Imaizumi et al. [US 6,678,313 B1]**, **Li et al. [US 6,411,610 B1]**, **Larijani et al. [US 6,603,746 B1]**, **Sheng [US**

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7,123,647 B1], Awater et al. [US 7,065,158 B2], Chan [US 6,393,599 B1], Miller et al. [US 2006/0164,270 A1], Ido [US 2006/0166,634 A1], Yamao et al. [US 6,351,498 B1], Schilling et al. [US 6,014,373], Raphaeli [US 6,937,648 B2], Sourour et al. [US 6,839,378 B1], Blanchard et al. [US 5,764,690].

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles C. Chow whose telephone number is (571) 272-7889. The examiner can normally be reached on 8:00am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles Chow *CC*

August 20, 2007.


EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600